IN THE CLAIMS

The status of each claim in the present application is listed below.

1. (Currently Amended) A double-stranded oligonucleotide comprising two strands of 19 to 23 nucleotides, each strand consisting, from 5' to 3', of a sequence of 17 to 21 ribonucleotides and two deoxyribo- or ribonucleotides, the 17 to 21 ribonucleotide RNA sequences of said strands being complementary and the two nucleotides of the 3' ends being protruding, wherein the RNA sequence of the sense strand or positive strand is that of a fragment of a transcript of an α, α' or β subunit of a CK2 protein kinase, selected from the group consisting of:

a) a fragment of a transcript of an α subunit included between positions 18-74, 259-279, 565-585, 644-664, 720-750, 808-831 and 863-885, from the ATG codon, with reference to the sequence SEQ ID NO: 88,

b) a fragment of a transcript of an α' subunit included between positions 49-69, 132-152, 306-326, 367-387, 427-447, 451-471, 595-615, 735-755, 827-847, 868-888, 949-969 and 988-1008, from the ATG codon, with reference to the sequence SEQ ID NO: 89,

c) a fragment of a transcript of a β subunit included between positions 80-100, 116-137, 164-208, 369-389, 400-420, 527-591 and 613-643, from the ATG codon, with reference to the sequence SEQ ID NO: 90, and

d) a fragment of 17 to 21 bases exhibiting at least 80% identity with the fragments defined in a), b), and c),

wherein the double-stranded oligonucleotide inhibits specifically more than 80% of the expression of the CK2 alpha, alpha' or beta subunit and of the corresponding mRNA in human cell culture at a concentration of between 1 and 200 nM.

2. (Previously Presented) The double-stranded oligonucleotide as claimed in Claim 1, wherein the 17 to 21 ribonucleotide RNA sequence of the sense strand is selected from the group consisting of:

a) a fragment of an α subunit defined by the RNA equivalent of the sequence SEQ ID Nos: 1 to 13,

b) a fragment of an α' subunit defined by the RNA equivalent of the sequence SEQ ID Nos: 14 to 25,

c) a fragment of a β subunit defined by the RNA equivalent of the sequence SEQ ID Nos: 26 to 40, and

d) a sequence as defined in a), b) or c), truncated by one or two nucleotides at its 5' and/or 3' end.

3. (Previously Presented) The double-stranded oligonucleotide as claimed in Claim 1, wherein each of the strands comprises a phosphate group in the 5' position and a hydroxyl group in the 3' position.

4. (Previously Presented) The double-stranded oligonucleotide as claimed in Claim 1, wherein said protruding nucleotides of the 3' ends are selected from the group consisting of the pairs tt and aa.

5. (Previously Presented) The double-stranded oligonucleotide as claimed in Claim 1, wherein the double-stranded oligonucleotide comprises two strands of 19 or 20 nucleotides.

6. (Previously Presented) The double-stranded oligonucleotide as claimed in claim 5, characterized in that the sense strand is defined by the sequence SEQ ID No. 67.

7. (Previously Presented) The double-stranded oligonucleotide as claimed in Claim 1, wherein the double-stranded oligonucleotide comprises two strands of 21 to 23 nucleotides.

8. (Previously Presented) The double-stranded oligonucleotide as claimed in claim 7, characterized in that the sense strand is defined by the sequence SEQ ID Nos. 83 and 86.

9. (Previously Presented) A single-stranded oligonucleotide, wherein the single-stranded oligonucleotide is defined by the antisense strand or negative strand of the double-stranded oligonucleotide as claimed in Claim 1.

10. (Previously Presented) The oligonucleotide as claimed in Claim 1, wherein the oligonucleotide is stabilized.

11. (Previously Presented): A precursor of the oligonucleotide as claimed in Claim 1, wherein the precursor is selected from the group consisting of:

a) a single-stranded oligonucleotide consisting of the 17 to 21 ribonucleotide RNA sequence and the two dexoyribo- or ribonucleotides of the sense or antisense strand of the oligonucleotide as claimed in Claim 1,

b) a double-stranded oligodeoxynucleotide corresponding to the sense and/or antisense strands of the oligonucleotide as claimed in Claim 1,

c) a hairpin oligoribonucleotide comprising the sequences of the sense and antisense strands of the double-stranded oligonucleotide as claimed in Claim 1,

d) a double-stranded oligodeoxynucleotide made up of a sense strand corresponding to the oligonucleotide defined in c) and of an antisense strand complementary thereto.

12. (Previously Presented) An expression cassette, comprising at least one precursor as defined in Claim 11, under the control of appropriate transcriptional regulatory elements.

13. (Previously Presented) An expression vector, comprising the cassette as defined in Claim 12.

14. (Previously Presented) The expression vector as claimed in Claim 13, wherein the expression vector is a DNA vector comprising a DNA precursor as defined in b) and d) included in an expression cassette.

15. (Previously Presented) A eukaryotic or prokaryotic cell, wherein the eukaryotic or prokaryotic cell is modified with an oligonucleotide as claimed in Claim 1.

Claim 16: (Canceled).

17. (Previously Presented): A pharmaceutical composition, comprising at least one oligonucleotide as claimed in Claim 1, one precursor of said oligonucleotide or one expression vector comprising said precursor.

18. (Previously Presented) The pharmaceutical composition as claimed in Claim 17, wherein said oligonucleotide, precursor or vector is associated with at least one substance that makes it possible to cross the plasma membrane.

19. (Previously Presented) The pharmaceutical composition as claimed in Claim 17 wherein said oligonucleotide, precursor or vector is associated with at least one substance that allows targeting into cells, tissues or organs.

20. (Previously Presented) The pharmaceutical composition as claimed in Claim 17, wherein said oligonucleotide, precursor or vector is combined with at least one antiviral or anticancer agent.

21. (Previously Presented): The pharmaceutical composition as claimed in Claim 17, comprising a mixture of several oligonucleotides or of their precursors, or else one or more expression vectors for said mixture of oligonucleotides.

Claims 22-23: (Canceled).

24. (Previously Presented): A product containing at least one oligonucleotide as claimed in Claim 1, and an anticancer active ingredient, as a combined preparation for simultaneous, separate or sequential use, in the prevention and/or treatment of cancer.

25. (Previously Presented) A product containing at least one oligoribonucleotide as claimed in Claim 1, and an antiviral active ingredient, as a combined preparation for simultaneous, separate or sequential use, in the prevention and/or treatment of viral diseases.

Claim 26: (Canceled).

27. (Previously Presented) The pharmaceutical composition as claimed in Claim 17, comprising a mixture of at least one oligonucleotide specific for a α subunit, at least one oligonucleotide specific for the α' subunit and at least one oligonucleotide specific for the β usbunit.

28. (New) The double stranded oligonucleotide as claimed in claim 1, which is selected from the group consisting of:

a) a fragment of a transcript of an α subunit included between positions 18-74, 259-279, 565-585, 644-664, 720-750, 808-831 and 863-885, from the ATG codon, with reference to the sequence SEQ ID NO: 88,

b) a fragment of a transcript of an α' subunit included between positions 49-69, 132-152, 306-326, 367-387, 427-447, 451-471, 595-615, 735-755, 827-847, 868-888, 949-969 and 988-1008, from the ATG codon, with reference to the sequence SEQ ID NO: 89,

c) a fragment of a transcript of a β subunit included between positions 80-100, 116-137, 164-208, 369-389, 527-591 and 613-643, from the ATG codon, with reference to the sequence SEQ ID NO: 90, and

d) a fragment of 17 to 21 bases exhibiting at least 80% identity with the fragments defined in a), b), and c).

29. (New) The double stranded oligonucleotide as claimed in claim 1, which is selected from the group consisting of:

a) a fragment of a transcript of an α subunit included between positions 18-74, 259-279, 565-585, 644-664, 720-750, 808-831 and 863-885, from the ATG codon, with reference to the sequence SEQ ID NO: 88,

b) a fragment of a transcript of an α' subunit included between positions 49-69, 132-152, 306-326, 367-387, 427-447, 451-471, 595-615, 735-755, 827-847, 868-888, 949-969 and 988-1008, from the ATG codon, with reference to the sequence SEQ ID NO: 89, and

c) a fragment of 17 to 21 bases exhibiting at least 80% identity with the fragments defined in a) and b).